## WHAT IS CLAIMED IS:

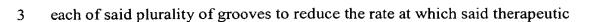
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- 1. An implantable prosthesis, comprising:
- a body structure having an outer surface capable of contacting a surface of
- 3 a vascular lumen;
- a plurality of grooves defined on said outer surface of said body structure;
- 5 and
- filament portions containing a therapeutic substance disposed in said
- 7 plurality of grooves.
- 1 2. The implantable prosthesis of Claim 1, wherein each of said
- 2 plurality of grooves has a preselected and controlled distribution and a preselected
- 3 and controlled depth.
- 1 3. The implantable prosthesis of Claim 2, wherein said preselected and
- 2 controlled depth is equal to about 10% to 90% of a thickness of said body
- 3 structure.
- 1 4. The implantable prosthesis of Claim 2, wherein said preselected and
- 2 controlled depth is not greater than about 65% of a thickness of said body
- 3 structure.

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- The implantable prosthesis of Claim 1, wherein each of said plurality of grooves are open ended.
- 1 6. The implantable prosthesis of Claim 1, wherein said plurality of grooves are formed by exposing said outer surface to an energy discharge from a laser.
- 7. The implantable prosthesis of Claim 1, wherein each of said
  plurality of grooves are formed in rows extending approximately perpendicular to a
  central longitudinal axis of said body structure.
  - 8. The implantable prosthesis of Claim 1, wherein each of said filament portions comprise a polymer material.
- 9. The implantable prosthesis of Claim 1, wherein said therapeutic substance comprises a substance selected from the group consisting of antineoplastic, antiplatelet, anticoagulant, fribrinolytics, antimitotic, thrombin inhibitor, antiinflammatory, and antiproliferative agents.
- 1 10. The implantable prosthesis of Claim 1, wherein said therapeutic 2 substance comprises a radioactive isotope.
- 1 11. The implantable prosthesis of Claim 1, further comprising a barrier formed on said outer surface of said body structure, wherein said barrier covers



- 4 substance is released.
- 1 12. An implantable prosthesis, comprising:
- a body structure having an outer surface capable of contacting a surface of
- 3 a vascular lumen;
- a plurality of grodves defined on said outer surface; and
- a polymeric substance containing a therapeutic substance disposed in said
- 6 plurality of grooves.
- 1 13. A method of loading a substance into a body of an implantable
- 2 prosthesis, comprising:
- providing a body structure having an outer surface capable of contacting a
- 4 vascular lumen surface;
- forming grooves on said outer surface of said body structure; and
- 6 positioning a monofilament including a therapeutic substance in said
- 7 grooves.
- 1 14. The method according to Claim 13, wherein said positioning
- 2 comprises winding a monofilament around said body structure to rest in said
- 3 grooves.

1	15.	The method according to Claim 14, further comprising removing
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- 2 portions of said monofilament extending outside of said grooves.
- 1 16. The method according to Claim 13, further comprising forming a
- 2 barrier on said lumen contacting surface of said body structure for releasing said
- 3 therapeutic substance at a controlled rate.
- 1 17. The method according to Claim 13, wherein said grooves comprise
- 2 open ended trenches extending substantially perpendicular to a central axis of said
- 3 body structure.
- 1 18. The method according to Claim 13, wherein said therapeutic
- 2 substance comprises a substance selected from the group consisting of
- 3 antineoplastic, antiplatelet, anticoagulant, fribrinolytics, antimitotic, thrombin
- 4 inhibitor, anti-inflammatory, and antiproliferative substances.
- 1 19. The method according to Claim 13, wherein said monofilament
- 2 comprises a polymer material including polyuethane blended with 10%-30%
- 3 dexamethasone.
- 1 20. An implantable prosthesis, comprising:
- a body structure having an outer surface capable of contacting a surface of
- 3 a vascular lumen;
- a plurality of open-ended trenches defined on said outer surface; and

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- a portion of a microfilament containing a therapeutic substance disposed in
- said plurality of trenches. 6

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